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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/766,906

Applicant(s)

YANG, SEUNG-SIK

Examiner

MARCUS T. RILEY

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☐ Claim(s) _____ is/are rejected.
7) ☒ Claim(s) 1-20 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 01/27/2008; 08/05/2005
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 21, 2008 has been entered.

Response to Amendment

2. This office action is responsive to applicant's remarks received on July 21, 2008. **Claims 1-20** remain pending.

Response to Arguments

3. Applicant's arguments with respect to amended **claims 1, 5, 9, 12, 15 & 19** filed on July 21, 2008 have been fully considered but they are not persuasive.

A: Applicant's Remarks

Claim 1

Osada et al. does not disclose "the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file(EMF)."

However, it is noted that the error flag is not related to "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 1 of the present application.

Thus, Osada et al. fails to disclose "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 1(emphasis added).

As such, it is respectfully submitted that Osada et al. fails to disclose the invention as recited in claim 1.

Claim 2

Osada et al. fails to disclose "determining whether the intermediate data has been completely converted into the printing data."

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 2.

Claim 3

In addition, claim 3 is patentable due at least to its depending from claim 1, as well as for the additional recitations therein.

Claim 4

Osada et al. fails to disclose "wherein the error is a general protection fault type error."

As such, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 4.

Claim 5

Osada et al. does not disclose "wherein the intermediate data is being Graphic Device Interface(GDI) function in a single enhancement meta file(EMF)."

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 5.

Claim 6

It is unclear whether Osada et al. inspects the intermediate data has been completely converted into the printing data by the driver, and outputs a result of the inspection as a conversion signal to the printer driver" as recited in claim 6.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 6.

Claim 7

It is unclear whether Osada et al. discloses "wherein the control unit comprises: an error inspector, which inspects whether an error has occurred while the intermediate data is converted into the printing data and outputs a result of the inspection as the control signal; and a data loader, which in response to the control signal, loads the intermediate data from the storage unit and outputs the loaded intermediate data to the printer driver" as recited in claim 7.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 7.

Claim 8

Claim 8 recites "further comprising a spooler loaded with intermediate data from the storage unit and outputting the loaded intermediate data to the printer driver, wherein the printer driver converts the intermediate data received from the spooler into the printing data."

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 8.

Claim 9

Osada et al. does not disclose whether the intermediate data is Graphic Device Interface function in a single enhancement meta file."

Further, claim 9 recites "... determining whether an error has occurred while the intermediate data is converted into the printing data..."

As noted above, Osada et al. fails to disclose "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 9 of the present application.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 9.

Claims 10-11

Claims 10-11 are also patentable due at least to their depending from claim 9, as well as for the additional recitations therein.

Claim 12

Claim 12 has been amended to recite "the intermediate data being Graphic Device Interface(GDI) function in a single enhancement meta file (EMF)."

As such, Osada et al. fails to recite the features as recited in claim 12.

In addition, claim 12 recites "converting the intermediate data into image type data and converting the image type data into the printing data if determined that an error has occurred."

As such, Osada et al. fails to disclose "converting the intermediate data into image type data and converting the image type data into the printing data if determined that an error has occurred" as recited in claim 12 of the present application.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 12.

Claim 13

In addition, claim 13 is patentable due at least to its depending from claim 12, as well as for the additional recitations therein.

Claim 14

It is unclear whether Osada et al. discloses "the error is a general protection fault type error" as recited in claim 14.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 14.

Claim 15

Claim 15 has been amended to recite "the intermediate data being Graphic Device Interface(GDI) function in a single enhancement meta."

As such, Osada et al. fails to discuss the invention as recited in claim 15.

However, Osada et al. does not "determine whether an error has occurred while the intermediate data is converted into the printing data, and in response to the determination, loading the intermediate data from the storage unit to the printer driver" as recited in claim 15.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 15.

Claim 16

Claim 16 recites "wherein the control unit inspects whether the intermediate data has been completely converted into the printing data by the printer driver, and outputs a result of the inspection as a conversion signal to the printer driver, and the printer driver converts the intermediate data into the printing data in response to the conversion signal."

Thus, Osada et al. fails to disclose the invention as recited in claim 16.

Claim 17

Claim 17 recites "an error inspector which inspects whether an error has occurred while the intermediate data is converted into the printing data and outputs a result of the inspection as a control signal..."

As such, it is unclear Osada et al. disclose "a control unit inspecting whether an error has occurred while the intermediate data is converted into the printing data, outputting a result of the inspection as the control signal, and in response to the control signal, loading the intermediate data from the storage unit and outputting the loaded intermediate data to the printer driver" as recited in claim 17.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 17.

Claim 18

In addition, claim 18 is patentable due at least to its depending from claim 15, as well as for the additional recitations therein.

Claim 19

Claim 19 has been amended to recite ", the intermediate data being Graphic Device Interface(GDI) function in a single enhancement meta."

As such, Osada et al. fails to disclose the invention recited in claim 19.

Osada et al. fails to disclose "a printer driver converting the intermediate data into image type data and then converting the image type data into printing data in response to a control signal" as recited in claim 19.

Accordingly, it is respectfully submitted that Osada et al. does not disclose the invention as recited in claim 19.

Claim 20

In addition, claim 20 is patentable due at least to its depending from claim 19, as well as for the additional recitations therein.

A: Examiner's Response

Claim 1

Osada '569 in combination with Mori '882 teaches, suggest or discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (*"The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program."* Mori '882 at column 6, lines 14-28).

Osada '569 does not fail to disclose "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 1. Osada '569 discloses converting the intermediate data into printing data (*"When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing."* column 12, lines 31-33); determining whether an error has occurred (*"Error flag: '1' indicates that some error has occurred in the printing apparatus 110."* column 9, lines 60-63). Here, the intermediate data is printed and the error flag indicates whether some error has occurred. Thus, Osada '569 does not fail to disclose "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 1.

As such, it is respectfully submitted that Osada '569 in combination with Mori '882 does not fail to disclose the invention as recited in claim 1.

Claim 2

Osada '569 does not fail to disclose "determining whether the intermediate data has been completely converted into the printing data." Osada '569 discloses "determining whether the intermediate data has been completely converted into the printing data." (*"This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the*

intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46). Here, there is a data conversion means that converts intermediate data into print data, the rendering unit generates and determines the data to be printed, and outputs the completed printed data.

Accordingly, it is respectfully submitted that Osada '569 does disclose the invention as recited in claim 2.

Claim 3

In addition, claim 3 is not patentable due at least to its depending from claim 1.

Claim 4

Osada '569 does not fail to disclose "wherein the error is a general protection fault type error." Osada '569 discloses where the error is a general protection fault type error ("*Error flag: '1' indicates that some error has occurred in the printing apparatus 110. This flag is added to a replay packet sent from the printing apparatus 110 to the host computer 109.*" column 6, lines 1-4). Here, the error flag indicates that some error has occurred in the printing apparatus. It is well known in the art that a general protection fault type error may be the type of error that may occur. Thus, Osada '569 discloses where the error is a general protection fault type error.

As such, it is respectfully submitted that Osada '569 does disclose the invention as recited in claim 4.

Claim 5

Osada '569 in combination with Mori '882 teaches, suggest or discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (*"The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program."* Mori '882 at column 6, lines 14-28).

As such, it is respectfully submitted that Osada '569 in combination with Mori '882 does not fail to disclose the invention as recited in claim 5.

Claim 6

Osada '569 inspects the intermediate data has been completely converted into the printing data by the driver, and outputs a result of the inspection as a conversion signal to the printer

driver" as recited in claim 6. Osada '569 discloses (*"Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to "analyzing". The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.*" column 12, lines 24-33). Here, the intermediate data is analyzed and updates the job state information and then eventually starts the print processing. It is well known in the art that when information is being analyzed, it is being inspected.

Accordingly, it is respectfully submitted that Osada '569 does disclose the invention as recited in claim 6.

Claim 7

Claim 17 recites "an error inspector which inspects whether an error has occurred while the intermediate data is converted into the printing data and outputs a result of the inspection as a control signal..." (*"In addition, the print data generated by the application unit 1401 of the host computer 109 is converted into PDL data by the printer driver unit 1402 and is transmitted to the printing apparatus 110 through the transmission buffer 1403 and the I/F driver unit 1404. When acquisition of information about the printing apparatus 110, setting of information, or job control is to be performed through the utility unit 1405 during data transmission, since exclusive control is performed by the I/F driver unit 1404, a request from the utility unit 1405 cannot be satisfied until the above PDL data is completely transmitted. This impairs the real-time*

performance. column 4, lines 13-24); See also ("Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to "analyzing". The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing." column 12, lines 24-33). Here, the intermediate data is analyzed and updates the job state information and then eventually starts the print processing. It is well known in the art that when information is being analyzed, it is being inspected.

Accordingly, it is respectfully submitted that Osada '569 does disclose the invention as recited in claim 7.

Claim 8

Claim 8 recites "further comprising a spooler loaded with intermediate data from the storage unit and outputting the loaded intermediate data to the printer driver, wherein the printer driver converts the intermediate data received from the spooler into the printing data." Osada '569 discloses where (*"The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed."* column 3, lines 12-14). Here, It is well know in the art that during the printing process, print information goes through a spooler. Furthermore, the buffer which is the storage unit, stores the intermediate data until its actually printed.

Thus, Osada '569 does disclose the invention as recited in claim 8.

Claim 9

Osada '569 in combination with Mori '882 teaches, suggest or discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (*"The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program."* Mori '882 at column 6, lines 14-28).

Osada '569 does not fail to disclose "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 1. Osada '569 discloses converting the intermediate data into printing data (*"When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing."* column 12, lines 31-33); determining whether an error has occurred (*"Error flag: "1" indicates that some error has occurred in the printing apparatus 110."* column 9, lines 60-63). Here, the intermediate data is printed and the error flag indicates whether some error has occurred. Thus, Osada '569 does not fail to disclose "determining whether an

error has occurred while the intermediate data is converted into the printing data" as recited in claim 1.

As such, it is respectfully submitted that Osada '569 in combination with Mori '882 does not fail to disclose the invention as recited in claim 9.

Claims 10-11

Claims 10-11 are also not patentable due at least to their depending from claim 9.

Claim 12

Osada '569 in combination with Mori '882 teaches, suggest or discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (*"The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program."* Mori '882 at column 6, lines 14-28).

Thus, Osada '569 does not fail to recite the features as recited in claim 12.

Claim 13

Claim 13 is not patentable due at least to its depending from claim 12.

Claim 14

Osada '569 does not fail to disclose "wherein the error is a general protection fault type error." Osada '569 discloses where the error is a general protection fault type error (*"Error flag: '1' indicates that some error has occurred in the printing apparatus 110. This flag is added to a replay packet sent from the printing apparatus 110 to the host computer 109."* column 6, lines 1-4). Here, the error flag indicates that some error has occurred in the printing apparatus. It is well known in the art that a general protection fault type error may be the type of error that may occur. Thus, Osada '569 discloses where the error is a general protection fault type error .

As such, it is respectfully submitted that Osada '569 does disclose the invention as recited in claim 14.

Claim 15

Osada '569 in combination with Mori '882 teaches, suggest or discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (*"The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs),*

and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program." Mori '882 at column 6, lines 14-28).

Osada '569 does not fail to disclose "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 1. Osada '569 discloses converting the intermediate data into printing data ("*When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.*" column 12, lines 31-33); determining whether an error has occurred ("*Error flag: "1" indicates that some error has occurred in the printing apparatus 110.*" column 9, lines 60-63). Here, the intermediate data is printed and the error flag indicates whether some error has occurred. Thus, Osada '569 does not fail to disclose "determining whether an error has occurred while the intermediate data is converted into the printing data" as recited in claim 1.

As such, it is respectfully submitted that Osada '569 in combination with Mori '882 does not fail to disclose the invention as recited in claim 15.

Claim 16

Osada '569 inspects the intermediate data has been completely converted into the printing data by the driver, and outputs a result of the inspection as a conversion signal to the printer driver" as recited in claim 6. Osada '569 discloses (*"Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to "analyzing". The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.*" column 12, lines 24-33). Here, the intermediate data is analyzed and updates the job state information and then eventually starts the print processing. It is well known in the art that when information is being analyzed, it is being inspected.

Accordingly, it is respectfully submitted that Osada '569 does disclose the invention as recited in claim 16.

Claim 17

Claim 17 recites "an error inspector which inspects whether an error has occurred while the intermediate data is converted into the printing data and outputs a result of the inspection as a control signal..." (*"In addition, the print data generated by the application unit 1401 of the host computer 109 is converted into PDL data by the printer driver unit 1402 and is transmitted to the printing apparatus 110 through the transmission buffer 1403 and the I/F driver unit 1404. When acquisition of information about the printing apparatus 110, setting of information, or job*

control is to be performed through the utility unit 1405 during data transmission, since exclusive control is performed by the I/F driver unit 1404, a request from the utility unit 1405 cannot be satisfied until the above PDL data is completely transmitted. This impairs the real-time performance. column 4, lines 13-24); See also (“Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to “analyzing”. The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.” column 12, lines 24-33). Here, the intermediate data is analyzed and updates the job state information and then eventually starts the print processing. It is well known in the art that when information is being analyzed, it is being inspected.

Accordingly, it is respectfully submitted that Osada ‘569 does disclose the invention as recited in claim 17.

Claim 18

In addition, claim 18 is not patentable due at least to its depending from claim 15.

Claim 19

Osada ‘569 in combination with Mori ‘882 teaches, suggest or discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (“The print data generating unit 14 is for producing, for a single job, one or more

intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program." Mori '882 at column 6, lines 14-28).

Thus, Osada '569 in combination with Mori '882 does not fail to disclose the invention as recited in claim 19.

Osada '569 does not fail to disclose "a printer driver converting the intermediate data into image type data and then converting the image type data into printing data in response to a control signal" as recited in claim 19. Osada '569 discloses converting the image type data into printing data in response to a control signal ("*...and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515).*" column 20, lines 34-46).

Thus, Osada '569 does disclose the invention as recited in claim 19.

Claim 20

In addition, claim 20 is not patentable due at least to its depending from claim 19.

Claim Rejections - 35 USC § 101

(The previous claim rejections are withdrawn in light of the applicant's amendments.)

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-20** are rejected under 35 U.S.C. 102(b) as being anticipated by Osada '569.

Regarding claim 1; Osada '569 discloses a printing method for recovering an error, comprising: storing intermediate data corresponding to a document to be printed (*"The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed."* column 3, lines 12-14) converting the intermediate data into printing data (*"When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing."* column 12, lines 31-33); determining whether an error has occurred

("Error flag: "1" indicates that some error has occurred in the printing apparatus 110, column 9, lines 60-63); while the intermediate data is converted into the printing data ("The JL parser unit 1408 analyzes the received data and determines, on the basis of predetermined JL information, whether the data supplied indicates information about the printing apparatus 110 or PDL data, thereby sending the data to the corresponding processing...thereby converting the data into intermediate data as a rendering object suitable for rendering... The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed." column 2, lines 65-67 thru column 3, lines 1-24); and in response to determining that an error has occurred, converting the intermediate data into image type data and converting the image type data into the printing data, wherein the document is printed using the printing data ("This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).

Osada '569 does not expressly disclose where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).

Mori '882 discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (*"The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program."* column 6, lines 14-28).

Osada '569 and Mori '882 are combinable because they are from same field of endeavor of network printer systems (*"The present invention relates to an intermediate file processing device used in a printer control system."* Mori '882 at column 1, lines 8-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printer system as taught by Osada '569 by adding where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).as taught by Mori '882.

The motivation for doing so would have been because it is advantageous to provide to provide an improved printer control system that enables the personal computer to control special

print jobs using simple processes independent of the printer model (*"It is therefore an objective of the present invention to overcome the above-described problem and to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model."* Mori '882 at column 5, lines 1-2).

Therefore, it would have been obvious to combine Osada '569 with Mori '882 to obtain the invention as specified in claim 1.

Regarding claim 2; Osada '569 discloses in response to determining that an error has not occurred or after determining that an error has occurred, and the intermediate data has been converted into image type data and the image type data has been converted into the printing data, determining whether the intermediate data has been completely converted into the printing data; and in response to determining that the intermediate data has not been completely converted into the printing data, going back to converting the intermediate data into the printing data (*"This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).*

Regarding claim 3; Osada '569 discloses where in response to determining that an error has occurred, loading the stored intermediate data; converting the loaded intermediate data into the image type data; and converting the image type data into the printing data (*"This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).*

Regarding claim 4; Osada '569 discloses where the error is a general protection fault type error (*"Error flag: "1" indicates that some error has occurred in the printing apparatus 110. This flag is added to a replay packet sent from the printing apparatus 110 to the host computer 109." column 6, lines 1-4).*

Regarding claim 5; Osada '569 discloses a printing apparatus for recovering an error, comprising: a storage unit storing intermediate data corresponding to a document to be printed storing intermediate data corresponding to a document to be printed (*"The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed." column 3, lines 12-14);* a printer driver converting the intermediate data into printing data or, in response to a control signal, converting the

intermediate data into image type data and then converting the image type data into the printing data (“*This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515).*” column 20, lines 34-46); and a control unit inspecting whether an error has occurred while the intermediate data is converted into the printing data, outputting a result of the inspection as the control signal, and in response to the control signal, loading the intermediate data from the storage unit and outputting the loaded intermediate data to the printer driver, wherein the document is printed using the printing data (“*In addition, the print data generated by the application unit 1401 of the host computer 109 is converted into PDL data by the printer driver unit 1402 and is transmitted to the printing apparatus 110 through the transmission buffer 1403 and the I/F driver unit 1404. When acquisition of information about the printing apparatus 110, setting of information, or job control is to be performed through the utility unit 1405 during data transmission, since exclusive control is performed by the I/F driver unit 1404, a request from the utility unit 1405 cannot be satisfied until the above PDL data is completely transmitted. This impairs the real-time performance.*” column 4, lines 13-24);

Osada '569 does not expressly disclose where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).

Mori '882 discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) (*"The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program."* column 6, lines 14-28);

Osada '569 and Mori '882 are combinable because they are from same field of endeavor of network printer systems (*"The present invention relates to an intermediate file processing device used in a printer control system."* Mori '882 at column 1, lines 8-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printer system as taught by Osada '569 by adding where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).as taught by Mori '882.

The motivation for doing so would have been because it is advantageous to provide to provide an improved printer control system that enables the personal computer to control special

print jobs using simple processes independent of the printer model (*"It is therefore an objective of the present invention to overcome the above-described problem and to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model."* Mori '882 at column 5, lines 1-2).

Therefore, it would have been obvious to combine Osada '569 with Mori '882 to obtain the invention as specified in claim 5.

Regarding claim 6; Osada '569 discloses where the control unit inspects whether the intermediate data has been completely converted into the printing data by the printer driver, and outputs a result of the inspection as a conversion signal to the printer driver, and the printer driver converts the intermediate data into the printing data in response to the conversion signal (*"Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to "analyzing". The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing."* column 12, lines 24-33).

Regarding claim 7; discloses where the control unit comprises: an error inspector, which inspects whether an error has occurred while the intermediate data is converted into the printing data and outputs a result of the inspection as the control signal (*"In addition, the print data generated by the application unit 1401 of the host computer 109 is converted into PDL data by the printer driver unit 1402 and is transmitted to the printing apparatus 110 through the*

transmission buffer 1403 and the I/F driver unit 1404. When acquisition of information about the printing apparatus 110, setting of information, or job control is to be performed through the utility unit 1405 during data transmission, since exclusive control is performed by the I/F driver unit 1404, a request from the utility unit 1405 cannot be satisfied until the above PDL data is completely transmitted. This impairs the real-time performance. column 4, lines 13-24); See also (“Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to “analyzing”. The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.” column 12, lines 24-33); and a data loader, which in response to the control signal, loads the intermediate data from the storage unit and outputs the loaded intermediate data to the printer driver (“Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to “analyzing”. The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.” column 12, lines 24-33).

Regarding claim 8; Osada ‘569 discloses a spooler loaded with intermediate data from the storage unit and outputting the loaded intermediate data to the printer driver, wherein the printer driver converts the intermediate data received from the spooler into the printing data

("The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed." column 3, lines 12-14).

Regarding claim 9; Osada '569 discloses a computer-readable recording medium storing a computer program for causing a processor to execute a printing method for recovering an error, the method comprising: storing intermediate data corresponding to a document to be printed (*"There are also provided a ...storage medium storing a printing control program."* column 6, lines 9-11); converting the intermediate data into printing data (*"When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing."* column 12, lines 31-33); determining whether an error has occurred (*"Error flag: "1" indicates that some error has occurred in the printing apparatus 110. column 9, lines 60-63*) while the intermediate data is converted into the printing data (*"The JL parser unit 1408 analyzes the received data and determines, on the basis of predetermined JL information, whether the data supplied indicates information about the printing apparatus 110 or PDL data, thereby sending the data to the corresponding processing...thereby converting the data into intermediate data as a rendering object suitable for rendering... The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed."* column 2, lines 65-67 thru column 3, lines 1-24); and in response to determining that an error has occurred, converting the intermediate data into image type data and converting the image type data into the printing data, wherein the document is printed using the printing data (*"This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to*

rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).

Osada '569 does not expressly disclose where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).

Mori '882 discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) ("*The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program..*" column 6, lines 14-28);

Osada '569 and Mori '882 are combinable because they are from same field of endeavor of network printer systems ("*The present invention relates to an intermediate file processing device used in a printer control system.*" Mori '882 at column 1, lines 8-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printer system as taught by Osada '569 by adding where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).as taught by Mori '882.

The motivation for doing so would have been because it is advantageous to provide to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model (*"It is therefore an objective of the present invention to overcome the above-described problem and to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model."* Mori '882 at column 5, lines 1-2).

Therefore, it would have been obvious to combine Osada '569 with Mori '882 to obtain the invention as specified in claim 9.

Regarding claim 10; Osada '569 discloses wherein the method further comprises: in response to determining that an error has not occurred or after in response to determining that an error has occurred, determining whether the intermediate data has been completely converted into the printing data; and in response to determining that the intermediate data has not been completely converted into the printing data, going back to converting the intermediate data into the printing data (*"Error flag: "1" indicates that some error has occurred in the printing apparatus 110. column 9, lines 60-63*). See also (*"This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data*

storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).

Regarding claim 11; Osada '569 discloses wherein the method further comprises: in response to determining that an error has occurred, loading the stored intermediate data; converting the loaded intermediate data into the image type data; and converting the image type data into the printing data ("*Error flag: "1" indicates that some error has occurred in the printing apparatus 110.*" column 9, lines 60-63). See also ("*This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515).*" column 20, lines 34-46).

Regarding claim 12; Osada '569 discloses a printing method for recovering an error, comprising: converting intermediate data into printing data ("*When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.*" column 12, lines 31-33); determining whether an error has occurred ("*Error flag: "1" indicates that some*

error has occurred in the printing apparatus 110. column 9, lines 60-63); while the intermediate data is converted into the printing data ("The JL parser unit 1408 analyzes the received data and determines, on the basis of predetermined JL information, whether the data supplied indicates information about the printing apparatus 110 or PDL data, thereby sending the data to the corresponding processing...thereby converting the data into intermediate data as a rendering object suitable for rendering... The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed." column 2, lines 65-67 thru column 3, lines 1-24); converting the intermediate data into image type data and converting the image type data into the printing data if determined that an error has occurred ("This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46); determining if the intermediate data has been completely converted into the printing data and printing the document using the printing data if determined that the intermediate data has been completely converted into the printing data ("This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is

associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).

Osada '569 does not expressly disclose where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).

Mori '882 discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) ("*The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program..*" column 6, lines 14-28);

Osada '569 and Mori '882 are combinable because they are from same field of endeavor of network printer systems (*"The present invention relates to an intermediate file processing device used in a printer control system."* Mori '882 at column 1, lines 8-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printer system as taught by Osada '569 by adding where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).as taught by Mori '882.

The motivation for doing so would have been because it is advantageous to provide to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model (*"It is therefore an objective of the present invention to overcome the above-described problem and to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model."* Mori '882 at column 5, lines 1-2).

Therefore, it would have been obvious to combine Osada '569 with Mori '882 to obtain the invention as specified in claim 12.

Regarding claim13; Osada '569 discloses where if determined that the intermediate data has not been completely converted into printing data, going back to converting the intermediate data into printing data (*"This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by*

conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).

Regarding claim 14; Osada '569 discloses where the error is a general protection fault type error ("*Error flag: "1" indicates that some error has occurred in the printing apparatus 110. This flag is added to a replay packet sent from the printing apparatus 110 to the host computer 109.*" column 6, lines 1-4).

Regarding claim 15; Osada '569 discloses a printing apparatus for recovering an error, comprising: a storage unit storing intermediate data corresponding to a document to be printed ("*The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed.*" column 3, lines 12-14); a printer driver converting the intermediate data into printing data ("*When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.*" column 12, lines 31-33); and a control unit determining whether an error has occurred while the intermediate data is converted into the printing data, and in response to the determination, loading the intermediate data from the storage unit to the printer driver, wherein the document is printed using the printing data ("*This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by*

conversion performed by the data conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).

Osada '569 does not expressly disclose where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).

Mori '882 discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) ("*The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program..*" column 6, lines 14-28);

Osada '569 and Mori '882 are combinable because they are from same field of endeavor of network printer systems ("*The present invention relates to an intermediate file processing device used in a printer control system.*" Mori '882 at column 1, lines 8-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printer system as taught by Osada '569 by adding where the intermediate

data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).as taught by Mori '882.

The motivation for doing so would have been because it is advantageous to provide to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model (*"It is therefore an objective of the present invention to overcome the above-described problem and to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model."* Mori '882 at column 5, lines 1-2).

Therefore, it would have been obvious to combine Osada '569 with Mori '882 to obtain the invention as specified in claim 15.

Regarding claim 16; Osada '569 discloses where the control unit inspects whether the intermediate data has been completely converted into the printing data by the printer driver, and outputs a result of the inspection as a conversion signal to the printer driver, and the printer driver converts the intermediate data into the printing data in response to the conversion signal (*"The JL parser unit 1408 analyzes the received data and determines, on the basis of predetermined JL information, whether the data supplied indicates information about the printing apparatus 110 or PDL data, thereby sending the data to the corresponding processing...thereby converting the data into intermediate data as a rendering object suitable for rendering... The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed."* column 2, lines 65-67 thru column 3, lines 1-24);

Regarding claim 17; Osada '569 discloses an error inspector which inspects whether an error has occurred while the intermediate data is converted into the printing data and outputs a result of the inspection as a control signal (*"In addition, the print data generated by the application unit 1401 of the host computer 109 is converted into PDL data by the printer driver unit 1402 and is transmitted to the printing apparatus 110 through the transmission buffer 1403 and the I/F driver unit 1404. When acquisition of information about the printing apparatus 110, setting of information, or job control is to be performed through the utility unit 1405 during data transmission, since exclusive control is performed by the I/F driver unit 1404, a request from the utility unit 1405 cannot be satisfied until the above PDL data is completely transmitted. This impairs the real-time performance.* column 4, lines 13-24); See also (*"Note that when the PDL translator unit 1512 recognizes the start of analysis of a job to which a new job number is assigned from the reception buffer 1511, the reception buffer 1511 updates the job state information 406 in the job management table in the device database unit 1509 to "analyzing". The rendering buffer 1513 temporarily stores a rendering object until it is actually printed. When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.*" column 12, lines 24-33). and a data loader which in response to the control signal, loads the intermediate data from the storage unit and outputs the loaded intermediate data to the printer driver (*"When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing.*" column 12, lines 31-33);

Regarding claim 18; Osada '569 discloses a spooler loaded with intermediate data from the storage unit and outputting the loaded intermediate data to the printer driver, wherein the printer driver converts the intermediate data received from the spooler into the printing data

("The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed." column 3, lines 12-14).

Regarding claim 19; Osada '569 discloses a printing apparatus for recovering an error, comprising: a storage unit storing intermediate data corresponding to a document to be printed (*"The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed."* column 3, lines 12-14); a printer driver converting the intermediate data into image type data (*"When 1-page intermediate data is stored in the rendering buffer 1513, the rendering unit 1514 starts print processing,"* column 12, lines 31-33); and then converting the image type data into printing data in response to a control signal (*"and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46*); and a control unit determining whether an error has occurred while the intermediate data is converted into the printing data, outputting a control signal according to the determination, and in response to the control signal, outputting the loaded intermediate data to the printer driver, wherein the document is printed using the printing data (*"This apparatus further includes a data conversion means (corresponding to the PDL translator unit 1512) for converting print data (corresponding to PDL data), of the above print job, which is associated with the execution of printing into intermediate data (corresponding to rendering command), intermediate data storage means (corresponding to the rendering buffer 1513) for storing the intermediate data obtained by conversion performed by the data*

conversion means, and rendering means (corresponding to the rendering unit 1514) for generating image data to be printed from the intermediate data stored in the intermediate data storage means, and outputting the image data to a printing unit (corresponding to the printer engine unit 1515)." column 20, lines 34-46).

Osada '569 does not expressly disclose where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).

Mori '882 discloses where the intermediate data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF) ("*The print data generating unit 14 is for producing, for a single job, one or more intermediate files and a command file representing control data necessary for printing the subject print job. The one or more intermediate files are called "Enhanced Meta Files" (EMFs), and each intermediate file (EMF) represents a single page's worth of image to be printed. As shown in FIG. 2(b), the print data generation unit 14 is constructed from an application 11, a printer driver 12, and a Graphical Device Interface (GDI) 13. The application 11 is provided by the application program. The printer driver 12 is provided by the printer driver user interface included in the operating system (OS) program. The Graphical Device Interface 13 is provided by the Graphical Device Interface program module included also in the operating system (OS) program..*" column 6, lines 14-28);

Osada '569 and Mori '882 are combinable because they are from same field of endeavor of network printer systems ("*The present invention relates to an intermediate file processing device used in a printer control system.*" Mori '882 at column 1, lines 8-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printer system as taught by Osada '569 by adding where the intermediate

data being Graphic Device Interface (GDI) function in a single enhancement meta file (EMF).as taught by Mori '882.

The motivation for doing so would have been because it is advantageous to provide to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model (*"It is therefore an objective of the present invention to overcome the above-described problem and to provide an improved printer control system that enables the personal computer to control special print jobs using simple processes independent of the printer model."* Mori '882 at column 5, lines 1-2).

Therefore, it would have been obvious to combine Osada '569 with Mori '882 to obtain the invention as specified in claim 19.

Regarding claim 20; Osada '569 discloses where the control unit inspects whether the intermediate data has been completely converted into the printing data by the printer driver, and outputs a result of the inspection as a conversion signal to the printer driver, and the printer driver converts the intermediate data into the printing data in response to the conversion signal (*"The JL parser unit 1408 analyzes the received data and determines, on the basis of predetermined JL information, whether the data supplied indicates information about the printing apparatus 110 or PDL data, thereby sending the data to the corresponding processing...thereby converting the data into intermediate data as a rendering object suitable for rendering... The rendering buffer 1410 temporarily stores the intermediate data of the rendering object generated by the PDL translator unit 1409 until it is actually printed."* column 2, lines 65-67 thru column 3, lines 1-24).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS T. RILEY whose telephone number is (571)270-1581. The examiner can normally be reached on Monday - Friday, 7:30-5:00, est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler L. Haskins can be reached on 571-272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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